Washington Park

ARBORETUM BULLETIN

Published by The Arboretum Foundation
for the University of Washington
Volume 56, No. 3 · Fall 1993 · $3.00

Officers of
The Arboretum Foundation
Duane Kelly
President
Vice Presidents:
Sheila Taft
Administration
Margaret Li
Unit Council
Karole Kiefer
Special Events
Phil Wood
Arboretum Planning
Rae Tennyson
Secretary
Steve Garber
Treasurer
Mary Thorne
Immediate Past President
Jan Patrick
Immediate Past Unit Council Chair
Debra Holland
Director
Leslie Stoner
Executive Secretary
Pamela Tharl
Bookkeeper

Editorial Board of the
Arboretum Bulletin
Jan M. Silver
Editor
Tom Berger
Linda Brubaker, Ph.D.
Kelly Dodson
Valerie Easton
Book Review Editor
Daniel J. Hinkley
Timothy Hohn
Jon Hooper
Steven R. Lorton
Sue Maloney
Brian O. Mulligan
Jan Pirzio-Biroli
Sarah Hayden Reichard
Mary Robson
Richard Walker, Ph.D.

Advertising Director
Susie Marglin (206) 325-4510

Center for Urban Horticulture
Clement W. Hamilton, Ph.D.
Director
Brian O. Mulligan
Director Emeritus
The Washington Park Arboretum
John A. Wott, Ph.D.
Director of Arboreta
Tracy Omar
Registrar

Concerning this issue . . .

"Do not sell plants to this woman." Someone should pin a little block-lettered message to my sweater, loosely based on the classic sign fastened to toddler rompers, "Do not give cookies to this child no matter how much she begs." I had a "sign" about my excessive plant purchasing habits recently. After having vowed not to buy one more bulb from the Arboretum Gift Shop, I could not ignore the large lobby display. When I picked up a much-needed packet of purple tulips, one of my fingers burned—I'd been stung by a wasp. The only activity to help curb my plant-buying mania has been a plant swap with a dozen friends, which satisfied some of my addiction—at least for two hours on the morning it was held this October.

This issue of *The Washington Park Arboretum Bulletin* may increase your plant cravings. Barbara Flynn makes an excellent case for using hellebores, including some new hybrids, in the garden for early blossom. Mary Robson suggests the best rhododendrons to buy for beautiful plants free of root weevils.

Looking forward to next summer, consider Sherry Wellborn's ideas for a Northwest herb lawn that needs less water and less mowing than regular lawns and will add some flowers and herbs to your turf palette. Questions about Pacific madrone, a native tree also needing little water and under used in the landscape, are answered by Dana S. Kelley, Rita L. Hummel, and Ralph S. Byther in their article.

If you're looking for some unique horticultural journals to buy or give as gifts, see Valerie Easton's "For Further Information." And for a better grasp of the Latin names in these and other publications, peruse the user friendly article by Clem Hamilton, director of the University of Washington's Center for Urban Horticulture (CUH). In this issue, another CUH faculty member, Professor John Wott, assumes the seasonal task of writing "In the Washington Park Arboretum." Dr. Wott has recently become the first director of the Washington Park Arboretum, charged with operations and management on behalf of the University.

We also welcome The Arboretum Foundation's new executive director, Debra Holland. Among other duties, Debra is the fund-raising arm of the non-profit foundation, which offers support to the University of Washington and City of Seattle's efforts to maintain and enhance the Washington Park Arboretum.

Jan Silver, Editor
The Washington Park Arboretum Bulletin

Cover: *Cornus kousa* is the only dogwood to flower in June and July (here with errant fall blossom). It is also noted for its beautiful berries and incredible autumn color. See one of the best specimens of this tree, which reaches over 20 feet in height, in the Arboretum's Woodland Garden. Photo courtesy of Joy Spurr.

Acer palmatum 'Atropurpureum'. How does plant naming work?
See page 6. Photo courtesy CUH.

CONTENTS

Articles

2 . . . . . The Magnificent Pacific Madrone *by Dana S. Kelley, Rita L. Hummel, and Ralph S. Byther*

6 . . . . . The Naming and Classification of Plants *by Clement W. Hamilton*

10 . . . . . Choosing Rhododendrons Resistant to Root Weevil Damage *by Mary Robson*

14 . . . . . Hellebores for Winter Blossom *by Barbara Flynn*

18 . . . . . A Northwest Lawn of Herbs *by Sherry Wellborn*

Columns

22 . . . . . In the Washington Park Arboretum *by John A. Wott*

Book Reviews

24 . . . . . *Gardening with Perennials Month by Month* and *Perennials and Their Garden Habitats* reviewed *by Susan Buckles*

25 . . . . . New on the Shelves of the Elisabeth C. Miller Library *by Valerie Easton*

27 . . . . . For Further Information: Interesting New Journals *by Valerie Easton*

In Bulletin *articles, an asterisk (*) indicates species, including varieties and/or forms, that can be found in the Washington Park Arboretum. Limited numbers of Arboretum specimens can be propagated by the Pat Calvert Greenhouse for members of The Arboretum Foundation. Also find many existing plant starts for sale at the greenhouse, located near the Graham Visitors Center, 2300 Arboretum Drive East, open from 10-12, Tuesdays.*

The Washington Park Arboretum Bulletin is published quarterly as a bonus of membership in The Arboretum Foundation. The Arboretum Foundation is a non-profit organization that was chartered to further the development of the Washington Park Arboretum, its projects and programs, by means of volunteer service and fund raising. The Washington Park Arboretum is administered through cooperative efforts between the University of Washington, its Center for Urban Horticulture, and the City of Seattle Department of Parks and Recreation. The programs and plant collections are a responsibility of the Center for Urban Horticulture.

The mission of The Arboretum Foundation is to ensure stewardship for the Washington Park Arboretum, a Pacific Northwest treasure, and to provide horticultural leadership for the region. This stewardship requires effective leadership, stable funding, and broad public support.

Articles on gardening and horticulturally related subjects are welcome. Please call the *Bulletin* for guidelines. For permission to reprint any part of the *Arboretum Bulletin*, please contact The Arboretum Foundation. © 1993 The Arboretum Foundation. ISSN 1046-8749.

For general information regarding the collections, visitor services, or programs of the Washington Park Arboretum, call (206) 543-8801. For information about the activities of The Arboretum Foundation, call (206) 325-4510. To receive information about public education programs of the Center for Urban Horticulture, please call (206) 543-8616 or 685-8033.

Join The Arboretum Foundation. Members receive four issues of the *Bulletin*, 11 issues of the newsletter, plant sale catalogs, discounts, and early notice of programs and special events: Individuals, $25; Families, businesses, and organizations, $35; Sustaining, $50; Contributing, $100; Supporting, $150; Sponsor, $200; Lifetime membership, $1,000. Send payment to The Arboretum Foundation, University of Washington XD-10, Seattle, WA 98195.

Typesetting and production by Scarlet Letters, Ltd.

Printed on 50% recycled gloss coated paper (10% post-consumer waste)

Dana Kelley

Ray Maleike

Rita Hummel

Ray Maleike

Rita Hummel

Magnificent Pacific Madrone

by Dana S. Kelley, Rita L. Hummel, & Ralph S. Byther

The Pacific madrone, *Arbutus menziesii*, is a native tree often associated with rocky hillsides along the Pacific coast. It is common along the shores of Puget Sound (and in the Arboretum), and is the only broad-leaved evergreen tree native to this area. Its often crooked or leaning trunks give each tree a unique, picturesque silhouette. In addition, shiny evergreen leaves and cinnamon-colored peeling bark make this tree an attractive specimen in a landscape.

Madrone is the largest member (up to 80 feet) in the Ericaceae (Heath family). This family also includes many of our favorite flowering shrubs, such as rhododendrons and heathers, as well as fruits, such as blueberries, huckleberries, and cranberries. Although its flowers are not as spectacular as those of some of its cousins, in the spring madrone produces dainty greenish ivory blossoms, reminiscent of lilies of the valley. The flowers are followed by showy, light orange- to crimson-colored fruit in the fall.

Also known as madrona, Pacific madrone was given its common name by the explorer Father Juan Crespi, chronicler of the Portola expedition in 1769. Madroño is the Spanish name for a related species, the strawberry tree, *Arbutus unedo*. The Pacific madrone, *A. menziesii*, and several other Pacific Northwest plants (including *Pseudotsuga menziesii*, the Douglas-fir), were given their scientific names after Archibald Menzies, the surgeon-naturalist who sailed with explorer Captain George Vancouver in 1792.

Upper photos: Native throughout western Washington, the Pacific madrone (*Arbutus menziesii*) is an evergreen drought-tolerant tree with peeling cinnamon bark, ivory urn-shaped flowers in spring, and striking orange to red fruit in the fall.

Lower left: Decline of wild madrone trees is often associated with development of the landscape where they are growing.

Lower right: Nursery-grown madrone trees in 3-gallon containers await transplanting into the landscape at the Washington State University Puyallup Research and Extension Center.

Evergreen plants, including the madrone and many conifers, dominate areas that experience a Mediterranean-type climate characterized by cool, wet winters and dry summers. Because of the lack of moisture, summer growth is severely limited. The adaptation of retaining their leaves through the winter enables madrones and other plants to take advantage of favorable conditions for photosynthesis throughout the year. In fact, most photosynthesis in our area occurs during relatively warm, moist periods in autumn, late winter, and spring.

Unfortunately, many favorite landscape plants are native to areas of northern Europe and East Asia, which experience greater rainfall in the summer. Such plants must be irrigated in order to keep them healthy. This is increasingly a concern when water supplies become limited. Native plants, such as the madrone and plants from similar climates, require less irrigation and are ideal for drought-tolerant landscapes.

The range of Pacific madrone extends from the southern coastal region of British Columbia, along the coasts and western mountain ranges of Washington, Oregon, and northern California, and continues in isolated communities south to San Diego County in southern California. As expected, the summers tend to be even hotter and drier in more southerly latitudes.

Madrones can be attacked by serious canker disease caused by the fungus *Hendersonula toruloides*. Weakened or stressed trees appear to be more susceptible. Infection usually occurs where young branches have been damaged by sunscald or other wounds. Death of new growth occurs when sap flow is disrupted, causing dieback of limbs. This disease seems most prevalent on wild trees that have been exposed because of urban development. Young trees in cultivation do not appear as subject to this disease.

Also watch for a root and crown rot caused by the fungus *Phytophthora cactorum*. Symptoms include a browning and thinning of leaves in the upper crown and a sunken or water-soaked area at the base of the tree. In severe cases, complete defoliation and death will occur. Excessive moisture at the tree's base and in the root zone may make madrones more prone to this disease.

Although they are not considered to be serious problems, the leaves of madrones are susceptible to

fungal leaf spots as well as leaf-miners and other insects. Winter damage is exhibited by dried leaf tips and margins. Evidence of these problems disappears, however, when the previous year's leaves are shed in the summer after new growth appears in the spring. In most situations, the impact of leaf spot diseases does not warrant fungicide applications.

Heavy irrigation is considered to be a factor contributing to the decline of mature wild trees incorporated into a garden. As part of the senior author's master's of science research at the University of Washington Center for Urban Horticulture, an experiment is under way at Washington State University (WSU), Puyallup, Research and Extension Center, to test the influence of heavy summer irrigation on established madrone trees. Water is being applied through a drip irrigation system with the amount and frequency timed to emulate a turf/bedding plant watering schedule. Also being tested is the influence of frequent watering versus no additional water on the establishment of madrone trees newly transplanted from 3-gallon containers.

Lack of demand and the belief that madrones are difficult to grow have made the nursery industry reluctant to produce them for commercial sale. Therefore, availability at this time is scarce to none. However, at WSU, Puyallup, Dr. Ray Maleike and Dr. Rita L. Hummel have shown that madrones are, in fact, easy to propagate and transplant.

Seeds from fruit of native madrone trees located at the southern end of Discovery Bay and in the Cascade Mountains of Washington were used in propagation experiments. After planting in sterile, moistened peatlite mix and storing for varying lengths of time in the dark at cold temperatures (36°–39° F), the seeds were transferred to the greenhouse for germination tests. Results of this research indicated that 60 days of cold-moist treatment produced the highest and most uniform germination of seeds from both the low and high elevation trees. Seeds that were not given a cold-moist treatment failed to germinate.

Madrone seedlings transplanted to 2¼-inch liner pots and then into 1- and 3-gallon containers filled with a potting medium of 2 parts fir bark and 1 part sharp sand (by volume) were grown on a gravel nursery bed with water supplied as needed by an overhead sprinkler irrigation system. The plants grew readily in the containers and produced a fibrous root system. In April, the madrones were transplanted into a full-sun landscape location in Puyallup in fine-sandy loam soil. All plants were watered when planted and then not watered again. Spring of the first growing season was wet in Puyallup while July and August were dry. Yet in fall of the first growing season all of the madrone trees were living and some had put out 3 to 4 feet of new growth. When completed, recommendations from this research should help make the madrone a more commonly available landscape plant.

E. F. Marten, courtesy of CUH

Unopened blossoms on a madrone in the Holly section of the Washington Park Arboretum.

Madrones in the Landscape

Because of its habit of dropping leaves and shedding bark throughout the summer, the madrone is considered to be rather untidy. For this reason, avoid planting next to a patio or lawn. Place it in association with shrubs, especially natives such as

salal (**Gaultheria shallon*). Avoid planting where it will be heavily irrigated. Limit southwest exposure to lessen the possibility of sunscald and infection by madrone canker.

The magnificent Pacific madrone has great potential for becoming a more utilized and valuable landscape tree. Many are discovering that it is possible to create attractive, utilitarian landscapes and at the same time use some of the native flora that are lost in most managed landscapes. By using native plants, such as the madrone, less water will be used in irrigating, and birds and other wildlife will be encouraged by the food cover these plants provide. Madrones and other native trees can provide the necessary framework for healthy urban environments.

References

Davison, A. D. 1972. Factors affecting development of madrone canker. *Plant Disease Reporter* 56:50-82.

Elias, T. S. 1980. *Trees of North America*: Field Guide and Natural History. New York: Van Nostrand Reinhold Co.

Grant, J., C. L. Grant, et al. 1990. *Trees and Shrubs for Pacific Northwest Gardens*. 2nd ed. Portland, OR: Timber Press.

Hummel, R. L., V. Bobbitt, and V. I. Lohr. 1991. ''People, Plants, and Water.'' *Washington's Land and People* 5(1):8-13.

Hunt, R. S., and A. Funk. 1976. ''Common Pests of *Arbutus* in British Columbia.'' Pacific Forestry Research Centre, Canadian Forest Series Pest Leaflet FPL 63.

Kruckeberg, Arthur R. 1982. *Gardening with Native Plants of the Pacific Northwest*. Seattle and London: University of Washington Press.

Maleike, Ray, and Rita L. Hummel. 1991. ''Germination of Madrona Seed.'' *Combined Proceedings International Plant Propagation Society* 41:283-5.

Peattie, Donald Cullross. 1953. *A Natural History of Western Trees*. Boston: Houghton-Mifflin Co.

Stuntz, D. E., and C. E. Seliskar. 1943. ''A Stem Canker of Dogwood and Madrona.'' *Mycologia* 35:207-221.

Dana S. Kelley is a graduate student pursuing a master's of science degree at the University of Washington Center for Urban Horticulture, Seattle, Washington.

Rita L. Hummel is an associate professor at Washington State University, Puyallup Research and Extension Center, Puyallup, Washington.

Ralph S. Byther is extension plant pathologist, Washington State University, Puyallup Research and Extension Center, Puyallup, Washington.

Pruning with Design

URBAN TREE SERVICE

BELLEVUE WA

641-5220

Decks
Fences
Gazebos
Trellises

GARDEN CARPENTRY
✣ Free Custom Design ✣
LANDAKER CONSTRUCTION
632-5583
Licensed and Bonded • #LANDAC*181ML

Earth laughs in flowers
Ralph Waldo Emerson

Beauty, comfort, serenity and style

From classic to contemporary

Fine landscape design

DESIGNS WITH NATURE™
Landscape design company
206-329-7830

The Naming and Classification of Plants

by Clement W. Hamilton

*Taxonomy is a study and practice of describing, naming, and classifying plants and animals. Plant taxonomists study similarities and differences among plants, as well as their evolutionary history, and then use simple rules to name and classify them. Those rules are summarized below, using examples from the living collections of the Washington Park Arboretum (signified by *).*

Don Normark, courtesy of CUH

Picea pungens f. *glauca* group under a January snowfall in the Washington Park Arboretum's Legume area.

Why should a person have to become a Latin scholar just to talk about garden plants? What ivory-tower pseudointellectual devised such incomprehensible plant names, and what possible significance could they have? Why are botanists always changing plant names? How can anyone learn, as painlessly as possible, to use the scientific names?

The modern system of scientific naming of plants and animals originated with common names used hundreds of years ago across Europe. Latin was naturally the language of choice because it was understood by educated persons throughout the multilingual region.

The name of a plant species comprised a short phrase, starting with a word that indicated the general group of plants, such as *Acer* (maple) or *Quercus* (oak), and followed by a word or phrase that narrowed it down to a species, such as "with large leaves" or "discovered by LeBlanc in Switzerland," or "used as an aphrodisiac." As European explorers returned with new plants from throughout the world, whose numbers of species dwarfed the relatively depauperate native flora, this system of naming became cumbersome and unwieldy.

In the mid-eighteenth century, the Swedish naturalist Carl von Linne, known as Linnaeus, simplified the early plant naming system and laid the foundation for modern naming and classification of plants and animals. He reduced the name to two words, first the general word (the genus) and then a one-word modifier (the species epithet), e.g., **Acer macrophyllum* (bigleaf maple). Thus was born what we call binomial nomenclature—two-name naming.

Linnaeus also grouped genera into a simple hierarchy based on their similarity and perceived relatedness. Thus, *Crataegus* (hawthorn), *Pyracantha* (firethorn) and *Rosa* (rose), for example, found themselves grouped together into what later botanists would call the family Rosaceae. In fact, botanists following Linnaeus elaborated on his hierarchy and created the system we use today, with genera grouped into families, families grouped into orders, orders into classes, classes into divisions (called phyla for animals), and divisions into kingdoms. (Just remember, "**K**ing **D**avid came **o**ver for **g**olf sticks" to recall kingdom, division, class, order, family, genus, species.)

Persons who name and classify organisms are taxonomists. They basically have two jobs: (1) to classify populations of individual organisms into basic indivisible groups, usually species but sometimes subspecies, varieties, or forms, as well, and (2) to arrange those species into the hierarchy of families and orders, and so forth, discussed above. The result is a clear means of communication about plants, understandable to plant aficionados throughout the world, no matter what their native language. Taxonomy is an active science—involving plant morphology, biogeography, evolutionary biology, ecology, and genetics—which is fundamental to our understanding of the natural world and to our efforts to conserve its diversity.

Taxonomy of *Picea pungens* f. *glauca*, Colorado Blue Spruce

See photo, left.

Kingdom:	Plantae
Division:	Gymnospermae
Class:	Coniferopsida
Order:	Coniferae
Family:	Pinaceae
Genus:	*Picea*
Species:	*Picea pungens*
Infraspecific:	*Picea pungens* f. *glauca*

Glossary

Biogeography is the branch of biology that deals with the geographical distribution of plants and animals.

Evolutionary biology is the branch of biology that deals with the origin of species.

f. is the abbreviation of form.

Genetics is the branch of biology that deals with the heredity and variation of organisms.

Infraspecific is included within a species.

Plant morphology is the branch of biology that deals with the form and structure of plants.

Species and Infraspecific Categories

A species is a set of natural populations of organisms that can be distinguished unambiguously from all other species.

I ask all my students to engrave the above definition on their memories. This definition recognizes that species are variable; if you have seen one **Picea pungens*, you have *not* seen them all. A species must differ clearly from related species, however, to merit recognition; if two previously recognized species overlap significantly in

their appearance, they may be combined into one species. Species are not separated based on differences found within a naturally occurring population. For example, it would be silly to say that male individuals of Chinese holly are one species while females are a different species: they are all **Ilex cornuta*.

Please note that the genus and species names are written in italics or underlined, to distinguish them from normal printing or script, and that the first letter of a genus name is always capitalized, e.g., **Prunus subhirtella* (Higan or spring cherry). Some older books also capitalize species epithets that commemorate a person, such as *davidii*, but almost all taxonomists frown on that practice as confusing and prefer to consistently use lower-case letters.

About five to ten percent of all species are subdivided into infraspecific categories, which are subspecies, varieties, and forms. This is done when there are groups within a species that are recognizable but not sufficiently distinct to be separated into different species. For instance, **Rhododendron cinnabarinum* is divided into two subspecies. *R. cinnabarinum* subsp. *cinnabarinum* and *R. cinnabarinum* subsp. *xanthocodon*; the latter has generally broader leaves. Similarly, **Acer palmatum* is divided into several varieties, such as var. *amoenum*, var. *matsumurae*, and var. **palmatum*. Notice that when a species is subdivided, one of the subdivisions takes the same name as that of the species itself. Subspecies and varieties are used when the subgroups are distinguishable by their appearance and their geographic range.

Forms are used rarely, usually for unusual variants that occur sporadically throughout a species' geographic range and that have some horticultural significance, such as **Gleditsia triacanthos* f. *inermis*, the thornless honey-locust. It is absolutely essential that the Latin name for these infraspecific groups be labeled; trinomials, such as *Buxus microphylla koreana* for Korean boxwood, are forbidden—it is **Buxus microphylla* var. *koreana*, a variety.

How Do Names Change?

Taxonomists are essentially conservative, which is good. No one wants to see plant names changing every few years, which would defeat the purpose of having a consistent international means of communication. But sometimes we learn something that should be reflected in the scientific nomenclature:

1. New names. Especially in the tropics, new species are being discovered constantly. My research experience with Central American *Psychotria* (false coffee) was fairly typical (see *Washington Park Arboretum Bulletin* 54:3); of the 61 species that I determined to exist in the region, I described 15 as new to science. Likewise, my seven new species of **Clethra* increased the size of the genus by ten percent. Some of the new species had been referred to by another name, but careful examination proved them to be distinct and worth assigning new names.

2. Lumping. My visit to Chile in 1988 confirmed what I had suspected from examining dried herbarium specimens, namely that *Escallonia alpina* (with generally small leaves, at high elevations) and *E. rosea* (larger leaves, lower elevations) are really the same species. The plants form a continuum, with large plants near sea level and progressively smaller ones growing on the sides of a volcano. *Escallonia rosea* is the older species name, so from now on that will be the name used for what had been two species.

3. Changing taxonomic placement. Sometimes a botanist describes a new species but places it in the wrong genus. When a later taxonomist places it in its correct genus, a name change is required. For instance, Paul Standley determined that *Cephaëlis psychotriifolia* belongs in the genus *Psychotria*, so he changed it to *Psychotria psychotriifolia*. This had the amusing result that the correct name means "*Psychotria* with leaves that look like *Psychotria*," which illustrates that the literal meaning of the name is unimportant when considering the need for non-arbitrary, consistent naming.

Families

The most important taxonomic level above the genus is that of family because we can learn to recognize members of families to help identify species we have not seen before. Someone who knows that plants in the heather family, Ericaceae, have tubular flowers, usually superior ovaries, and usually evergreen leaves, will have a much easier time understanding **Kalmia latifolia* (mountain laurel) upon seeing it for the first time. In fact, even though there are over 300 families of flowering plants, the vast majority of landscape plants fall within fewer than forty families. The most significant to us are Caprifoliaceae, Compositae, Ericaceae, Gramineae (Poaceae), Leguminosae (Fabaceae), Liliaceae, Oleaceae, Pinaceae, and Rosaceae. Almost all end in the suffix "aceae"

except for ten that have both old names and "aceae" equivalents, such as Leguminosae/Fabaceae.

Hybrids

When two species hybridize, either artificially or in nature, we can choose to name the offspring. The simplest way is with a hybrid formula, say *Taxus baccata* × *T. cuspidata*, which refers to both parent species of a yew hybrid. If that is a common hybrid combination, a taxonomist may create a species name to refer to the hybrids, in this case **Taxus* ×*media*, with the × in front of the species epithet. Almost all hybridization occurs within a genus, but when it occurs between different genera, we must invent a hybrid genus epithet as well as a species name. So the hybrid products of *Fatsia japonica* and **Hedera helix* (English ivy) are known as * ×*Fatshedera lizei*, with the × before the genus name to indicate the level of hybridization.

Cultivated Varieties

Not all plant groups of concern to horticulturists occur in nature. What of those terrific landscape plants that are created or maintained only in cultivation? This is where we use cultivar names for cultivated varieties. Here is another definition, this from the *International Code of Nomenclature for Cultivated Plants—1980*: "A cultivar is an assemblage of cultivated plants that is clearly distinguished by any characters and which, when reproduced (sexually or asexually), retains its distinguishing characters." Cultivar names are written very differently from the Latin-style names in order to prevent confusion. A cultivar of Port Orford cedar is **Chamaecyparis lawsoniana* 'Green Hedger', which also may be written **C. lawsoniana* cv. Green Hedger. Since 1959, new cultivar names have had to be of non-Latin derivation, also to reduce confusion, but there are plenty of Latin-derived names still used currently, such as **Acer palmatum* 'Atropurpureum'. Frequently one encounters a cultivar name directly following a genus name, such as **Rhododendron* 'Brocade'; this refers to a cultivar originating in hybridization between two species where there is no hybrid species name.

I hope this short introduction has shed some light on the origin, significance, and proper use of plant names. In a very short time, anyone can learn to rattle these names off like a professional. In another issue, we will examine the proper pronunciation of those Latin names and complete this short course in botanical literacy.

(Located 7½ miles from any ferry)
20211 Vashon Hwy. S.W., Vashon Island, WA 98070
206-463-3655 *(Seattle)*
An uncommon place at the heart of Vashon Island. Offering the unusual in perennial ornamentals, herbs, garden decor, gifts, natural fiber clothing and more.
Send $1.00 for plant list.

We plan it, cater it and do it
Within the setting of a famous tour garden . . . weddings, receptions, garden parties, bar mitzvahs, antique auto shows . . . you name it, we can do it.
(206) 584-4106
WAGNER HOUSE
LAKEWOLD GARDENS

The Berger Partnership, P.S.
2021 Minor East
Seattle, Washington 98102
(206) 325-6877
Landscape Architecture
Site Planning

Clement W. Hamilton is Director of the University of Washington Center for Urban Horticulture and Associate Professor of Horticultural Taxonomy. He teaches taxonomy and landscape plant selection, and has served on the editorial board of *The Washington Park Arboretum Bulletin*.

Reference

Christopher Brickell, ed. 1980. *International Code of Nomenclature for Cultivated Plants—1980*. Utrecht, The Netherlands: Bohn, Scheltema, & Holkema. International Commission for the Nomenclature of Cultivated Plants. 32 pages.

Choosing Rhododendrons Resistant to Root Weevil Damage

by Mary Robson

Planted for their spring beauty and often for their sturdy evergreen contribution to landscapes, rhododendrons of all types are common in almost all maritime Northwest gardens, appropriately for our location in the "Rhododendron State." Eventually most gardeners, no matter how casual about plant care, find themselves confronted by a common pest—the root weevil.

Root Weevil Damage

Even a novice gardener will find the notched appearance of many cherished rhododendron leaves in May or June, a damaged edge sometimes featuring small nibbles or larger holes that fit together into deeper jagged notches like a fiord. Caused by a weevil, the leaf-feeding damage will probably not affect the plant's survival. But if the plant is in a container, it may be severely damaged or even killed by the weevil's larval form. And because rhododendrons spend about 11 months of the year out of bloom, the chewing certainly reduces the attractiveness of the leaves and annoys the gardener's sense of aesthetics.

The adult root weevil (*Otiorhynchus* spp. and others) chews at night, commonly in April or May as the foliage is emerging. Many species of adult weevils active in the Northwest and across the United States hide in ground litter during the day and feed at night. Like many insects, they prefer young, tender leaves and will chew primarily on newly developing foliage. Holes in the leaves are present until the leaf falls; the plant will not outgrow the damage.

One way to get rid of weevils is to go out with a flashlight at night and knock them into a can of soapy water. Destroying the mature insects in May and June will help to control further infestations by preventing their reproduction. Some gardeners use a biological control, a beneficial nematode applied as a soil drench; this is being tried with some success in our area. Less benign is the practice of using an insecticide such as acephate; this broad-spectrum insecticide also poisons bees and other beneficial insects.

As gardeners make changes toward reducing or eliminating toxic chemicals in the garden, using insecticides on root weevils becomes a less desirable choice. And when gardeners face reduced time for garden maintenance, dealing with insects in any manner is often one chore too many.

Glossary

Elepidote leaves are scaleless.

Indumentum is the felt-like covering found on the underside of a leaf, varying in color, texture, and effect in the landscape.

Lepidote leaves have glandular scales on them.

Stamen is the male organ of a flower, containing pollen.

Resistant Rhododendrons

The landscape is not doomed to contain either unsightly, chewed rhododendron leaves or leaves sprayed with weevil poisons. Fortunately, many rhododendron and azalea species or cultivars show root weevil resistance. Research done in Washington and Oregon over the last two decades has identified some of the mechanisms that help the plants resist chewing; researchers have also isolated lists of some of the plants that will fare best under root weevil pressure. These plant adaptations explain why gardeners and growers may observe one plant being severely attacked and another, close by, exhibiting little or no damage.

The primary plant defense presently being inves-

Rhododendron 'Point Defiance' is a hybrid that is resistant to root weevils.
Photo by Mary Robson

tigated is the secretion of essential oils that inhibit feeding. Lepidote rhododendrons, those with glandular scales on the leaves, exhibit more resistance than elepidote, or scaleless, rhododendrons. The scales are sources of terpenes, one of which, germacrone, is a particularly powerful repellent. In addition to the presence of inhibiting terpenes, some rhododendrons such as the species *Rhododendron impeditum*, a short rockery plant with small purplish-blue flowers, are fully resistant to root weevil feeding. *Rhododendron scintillans*, another small-flowered blue lepidote, also rejects weevils.

Rhododendron williamsianum, an elepidote (no leaf scales) has a slightly rolled-under leaf edge that weevils cannot as easily span with their jaws (like a submarine sandwich that is too wide to bite). Home gardeners may also try *Rhododendron yakushimanum* and many of its hybrids; tests show species to be 90 percent resistant. Yakushimanums also have the winter interest of the heavily felted indumentum-laden leaves in addition to a range of handsome white, rose, and red flowers on 2- to 3-foot bushes. The visual and tactile pleasure presented by the white, tan, or even deep brown indumentum adds another dimension to the rhododendron garden. A *R. yakushimanum* in my garden has shown no damage at all for the last five years despite the obvious and ubiquitous presence of root weevils whose gnawing on the nearby Pacific wax myrtle (*Myrica californica*) is all too apparent. If hybridized, however, some of the resistance in the *Yakushimanum* species will be lost. Undoubtedly, experimenting with species rhododendrons will reveal many that grow well and resist weevil damage though not as yet included in research trials.

Plant breeding has allowed some species to lend their good qualities to new plants, and results in a number of vigorous and substantially resistant cultivars. Choices in hybrids abound, with about 30 making the list in Washington State University publication EB 1229, "How to Identify Rhododendron and Azalea Problems." Resistant rhododendrons, happily, are available in white, pink, rose, purple, and yellow, and in all plant sizes and leaf textures.

Of those commonly available in nurseries, the rock-hardy lepidote *Rhododendron* 'P.J. Mezitt' ('P.J.M.') leads, having foiled root weevil chewing 100 percent of the time in tests. Unlike many rhododendrons, this one will prosper in full sun and will grow to 4 feet with lavender-blue flowers and small leaves that acquire a reddish-mahogany cast in winter. *Rhododendron* 'P.J.M. Compacta' may suit a smaller garden.

Another sturdy blue hybrid is *Rhododendron* 'Oceanlake', also a full-sun lover with fine foliage like an evergreen azalea and dense blooms that bury the foliage in spring, creating an impression of a solid purple-blue mass. The violet-blue flowers, with attractive prominent stamens, fade to a slightly lighter blue in the center. This one grows to 30 inches in height. For a tall blue, try the tree-like six-foot *R. augustinii* 'Blue Cloud', with light-green 3-inch lepidote leaves tinged toward yellow and red in autumn; its leaf-character is entirely unlike the heavy green mass we more commonly associate with rhododendrons.

Robert Frost wrote, "Nature's first green is gold," and spring gardens with their predominant chartreuse tones lend themselves to the use of yellow-flowering shrubs. *Rhododendron* 'Crest' would be elegant with late spring bulbs such as white cottage tulips; the fluted buds of 'Crest' look like butterscotch taffy opening to a clear yellow with a salmon-tinged throat. This shrub eventually reaches six feet with solid green lepidote leaves. *Rhododendron* 'Odee Wright', also lepidote, has compact growth to four feet, prefers shade from hot afternoon sun, and has ruffled bell-like flowers with a yellow-green cast. The leaves are solid and handsome and would add weight to the mixed border.

One familiar and attractive white that resists chewing is *Rhododendron* × 'Cilpinense', an early bloomer (often in March), which carries profuse bunches of white flowers blushed slightly pink; they hang in loose clusters. The foliage is shiny and handsome all year round, and the bush is low and spreading to three feet. Another white to try is *R.* 'Dora Amateis', semi-dwarf, blooming in late spring. Nearly pure-white flowers cover this one so thoroughly that the bushes look like snowdrifts in the landscape. This is another vigorous grower comfortable in full sun.

If your landscape taste craves an overwhelming pink and salmon accent, and if you want a rhododendron that offers elegance in the tall, stately, and immense mode, *R.* 'Virginia Richards' will prove that pest resistance is no barrier to beauty. Blooming in late spring, often in May, salmon buds flushed with cherry open to pale pink flowers held in clusters of ten. If all this glory is not enough, each flower has a deep rose inner throat and pale peach stamens. It grows to four feet and has elepidote leaves. Another startling hybrid, *R.*

'Point Defiance', has bright rose buds opening to large clusters of pale pink flowers with a ruffled rosy pink edge. As the flower fades to white, the edge intensifies to deeper red.

Finding Resistant Rhododendrons

Choosing resistant species and cultivars requires both observation and finding the list of those tested; home gardeners are not likely to get out a gas chromatograph to check for terpenes. Over 40 different species of rhododendrons tested showed 70 percent to 100 percent resistance. For the complete list, look in WSU's publication, EB 1229, listed below.

While some of the resistant species may be found in nurseries, another possibility is to check specialty sales such as the spring sale at the Rhododendron Species Botanical Garden in Federal Way. Also look for the Washington Park Arboretum sale (planned for May 14-15, 1994), which sells plants propagated there.

So if you are planning a new woodland garden or replacing a bitten and unattractive rhododendron, look for those whose natural adaptations provide them with protection. Since over 1,000 species and over 5,000 cultivars exist, gardeners can learn more about other weevil-resistant types by observing them in the Arboretum, public gardens, and nurseries. Selecting weevil-resistant rhododendrons provides lower garden maintenance, increased landscape beauty, and more year-round satisfaction for the gardener.

References

Thanks to Ned Wells of Wells-Medina Nursery for conversation and assistance.

Antonelli, Arthur, Ralph S. Byther, Ray Maleike, and Sharon Collman. "How to Identify Rhododendron and Azalea Problems." EB 1229. Cooperative Extension. Pullman, WA: Washington State University. Not all the rhododendrons listed in this publication are commonly available in the trade; those listed in this article are available as of spring 1993.

Doss, Robert P. "Root Weevil Feeding on Rhododendron: A Review." *Journal of Environmental Horticulture* 1(3): 67-71, September 1983.

Doss, Robert P. "Essential Oils and Rhododendron Scales." *Journal of the American Rhododendron Society* 41(2): 47-49, spring 1987.

Mary Robson coordinates the Washington State University Cooperative Extension Master Gardener program for King County, Washington, serves on the *Washington Park Arboretum Bulletin* editorial board and The Arboretum Foundation, and spends free time designing and redesigning a tiny garden in the Capitol Hill district of Seattle, Washington.

LAIRD, NORTON TRUST Co.
NORTON BUILDING
801 Second Avenue, Floor 16
Seattle, WA 98104-1564
206-464-5295 1-800-426-5105

DONALD S. HAVILAND
Landscape Gardener
A Garden's Magic
Aspects Balanced
Implemented • Enhanced • Maintained
HAVILDS169LL 232-7858

UNCOMMONLY BEAUTIFUL

WELLS MEDINA NURSERY
8300 N.E. 24th St., Bellevue 454-1853

© Lynne Harrison 1992

Hellebores for Winter Blossom

by Barbara Flynn

Barbara Flynn

With the current passion for perennials, hellebores have become very popular—and for good reason. When delphiniums and daisies snuggle down under their mulch, hellebores are sending up their brave blooms and drawing us into the winter garden.

The first hellebore to flower is the well-known but seldom seen ***Helleborus niger***, often called the Christmas rose. It is found growing in the mountains of Switzerland and Germany south into Italy and the former Yugoslavia. The leaves are glossy, dark green, and pedately divided into seven or more segments held upright until flattened by weather. The flowers vary in size, and since many plants offered for sale are grown from seed, try to make your selections while in bloom.

Helleborus 'White Magic', one of the named clones, is a lovely sort with 3-inch flowers that fade to a soft pink. *Helleborus niger* ssp. *macranthus* is found in some areas of northern Italy. Its leaves have narrower segments and are slightly bluish in color. A form grown by Loie Benedict of Auburn, Washington, is called *H. niger* var. *altifolius*. The flowers are large, flushed with pink, and come in early November. The stems are spotted with purple, and the leaves are slightly serrated.

The best time to plant seedlings of *Helleborus niger* is in early spring into a good, loamy soil under a non-aggressive deciduous shrub or a

© Lynne Harrison 1993

Barbara Flynn

Upper: *Helleborus foetidus* 'Wester Flisk'. **Lower:** An *H. orientalis* double with the variegated leaves of *Aquilegia* sp. (columbine).

(Opposite page) **Upper:** *H. niger* 'White Magic'. **Lower:** *H. argutifolius*.

Glossary

Clone is a group of identical plants originating from a single plant by vegetative propagation.

Form, used rarely, is a form of classification usually used for unusual variants occurring sporadically throughout a species' geographic range with some horticultural significance.

Pedately divided leaves have radiating lobes or divisions; the lateral lobes are divided.

Picotee flowers are one basic color with a margin of another color.

Sepal is the usually green outer ring of floral parts.

Species is a division of plant classification.

Strain is a group of very similar individuals.

Subspecies is a classification used when the subgroups of a species are distinguishable by their appearance and their geographic range.

north wall. Some lime and superphosphate added to the planting hole will be welcome; moisture is essential.

One way to get the Christmas rose to live up to its name is to put it into a cold frame or cover with a cloche. The new horticultural cloth used to protect early vegetable crops could also be used; in addition, this would prevent mud from splashing on the plants.

Helleborus foetidus, a handsome plant about 2 feet tall, is another evergreen hellebore. It has a large repertoire of unsavory names referring to the smell released when its leaves are handled. The dark green leaves emerge from the strong stem and are composed of many narrow leaflets displayed in a fan shape. A mature plant can produce many stems, each with a cluster of chartreuse green, bell-shaped flowers about ¾″ long, edged with a delicate reddish band at the end of each sepal. After bloom, these stems can be cut off since they will not bloom again. There are some splendid forms available whose stems and leaves are infused with dark red tones. *Helleborus foetidus* 'Wester Flisk' is the best known, but there are unnamed forms that have even darker colorations.

Give *Helleborus foetidus* good soil, rich in humus, with good drainage. Shelter from the wind is necessary because they are heavy plants and their stems crack easily, allowing pests and diseases to enter. Although not long-lived, they seed around quite freely.

The evergreen ***Helleborus argutifolius*** is sometimes called the Corsican hellebore. Like *H. foetidus*, it has good, strong stems with a terminal cluster of flowers, but there the resemblance ends. The leaves of this hellebore are divided into three leaflets with spiny edges; the flowers are bowl shaped, the color of unripe apples, and they emerge later than other species. Oddly, one usually sees this hellebore grown in the shade, whereas in its native habitat it associates with such plants as *Euphorbia wulfenii* and *Lavendula stoechas*, both sun lovers and drought tolerant. It is a good-natured plant and, provided it is given good, deep soil, can grow to 4 feet tall and just as wide. Pam Frost of Vancouver, British Columbia, discovered a plant with variegated leaves whose seedlings also have this trait, and they are being introduced under the name 'Pacific Frost'.

Helleborus lividus is often confused with *H. argutifolius* but the main visible difference is in the leaves. *Helleborus lividus* differs with its silvery network of veins on the upper part of the leaves and the underside flushed with purple. However, *H. lividus* comes from the island of Majorca and is quite tender so that plants usually seen with these markings in the Seattle area tend to be hybrids of the two species.

Hellebores are chummy plants; most species are quite happy to cross with each other, which brings us to the most often seen hellebore, commonly called ***Helleborus orientalis*** or Lenten rose. The true *H. orientalis*, from the Black Sea environs, is rather rare in cultivation. The plants we usually see are hybrids of several distinct species. These new beauties have colors ranging from deepest blue-black and smoldering red, through spots and picotee markings into soft yellows and pinks. Some local growers are raising imported and specially selected hybrids, which should be on the market soon. Evie Douglas of Cricklewood Nursery, Snohomish, Washington, is developing a good red double form that the general public can look forward to in 1995.

The *Helleborus orientalis* hybrids are the easiest of the hellebores to grow. I have seen them doing extremely well in full sun and in deep shade. For optimal performance, however, plant them in the shade of non-surface rooting trees in soil rich with humus. In the fall, they can be top dressed with compost, and lime should be added every other year. A balanced fertilizer applied in early spring will ensure good growth. Also, cut off the leaves of *H. orientalis* hybrids in November. This

prevents them from being whipped around by the wind and discourages fungal diseases. It has the added benefit of allowing you to see the flowers develop.

To unravel the intricacies of these species would take a book, and two excellent ones have recently been published: Brian Mathew's scholarly *Hellebores* and *The Gardener's Guide to Growing Hellebores* by Graham Rice and Elizabeth Strangman. Both books are beautifully illustrated. The Mathew book concentrates on the species, their origins, and differences. The Rice and Strangman book is concerned more with the wealth of hybrids now being produced.

When winter is at its worst, cut a few hellebore flowers and float them in a small bowl. You will find that, indeed, happiness is a hellebore.

Long-time Arboretum Foundation member Barbara Flynn gardens in Redmond, Washington. She is also active in the King County Iris Society, the Seattle Primrose Society, and the Master Gardener Program.

References

Mathew, Brian. 1989. *Hellebores*. Surrey, England: Alpine Garden Society.

Rice, Graham, and Elizabeth Strangman. 1993. *The Gardener's Guide to Growing Hellebores*. Portland, OR: Timber Press.

Sources

Purchase hellebores while in bloom so you know the colors and shades you are getting. Supplies of newer crosses may be limited or affected by weather.

Cricklewood Nursery, Snohomish, Washington. Evie Douglas specializes in *Helleborus orientalis* and *H. corsicus*. Some of her hellebores are in the sought-after darker colors. *H. orientalis* with double flowers will be available to the public in 1995. Call for an appointment or for current hours: (206) 568-2829.

Gathering Garden, Stanwood, Washington. This small nursery has many Will McLewin seedlings (from England, as featured in Graham Rice's book, above). Call for an appointment or for current hours: (206) 629-2706.

Swanson's, 9701 15th NW, Seattle, WA 98117. Look for *Helleborus argutifolius*, *H. foetidus* (including, potentially, *H. foetidus* 'Wester Flisk'), *H. orientalis*, and, occasionally, *H. niger*: (206) 782-2544.

Wells-Medina Nursery, 8300 NE 24th St., Bellevue, WA. Available now are *Helleborus corsicus*, *H. foetidus*, and some younger *H. orientalis*. In spring of 1994, they are *hoping* to have *H. foetidus*, *H. niger*, and older, field-grown *H. orientalis*. Also in early spring of 1994, there may be 'White Magic', a New Zealand cross between *niger* and *orientalis*. In late spring, the nursery has been promised some dark-flowered *H. orientalis*: (206) 454-1853.

A Northwest Lawn of Herbs

by Sherry Wellborn

Tom Cook

Sherry Wellborn

Upper: The Northwest herb lawn in late spring at Tom Cook's test plots on Oregon State University's Lewis Brown Research Farm.

Lower: An herb lawn in fall on Bainbridge Island.

Two Northwesterners have been rethinking Pacific Northwest lawns—Tom Cook, an associate professor of horticulture at Oregon State University (OSU), Corvallis, and Rosemary McGee, Nichols Garden Nursery, Albany, Oregon. Together, they have created a list of flowering plants that can be sown with turf grasses to improve the look and quality of our carpets of green.

The Northwest herb lawn requires less water, less fertilizer, and less mowing than is recommended for a traditional lawn, yet it still looks good. The mix created by Cook and McGee contains one or more grasses and a variety of flowering and non-flowering herbs. The idea is to produce a grass matrix filled in with broad-leaved plants that will sustain itself without fertilization and using little irrigation throughout the year.

Traditional Northwest Lawns

A graceful sweep of well-kept lawn evokes feelings of pleasure and leisure. Many people want ample areas of turf, and here in the Pacific Northwest lawns grow well, except in the dry summer months. Although a number of grasses are used in lawns, the typical mix used here contains perennial rye (*Lolium perenne*) and fescue (*Festuca* spp.). Most of these mixes have been developed in the Midwest where grassland is native.

Unlike the Midwest where summer rainfall is abundant, the Pacific Northwest receives negligible rain during summer months. This creates difficult growing conditions for lawns. In 1992, we experienced a drought that caused some towns to prohibit lawn watering. The grass went dormant until the arrival of the fall rains. Brown grass is not a pretty sight, but we can expect to see it more often as steady population growth strains a limited supply of water.

The Lawn Invaders

Whichever grass mixture you originally sow, the lawn will ultimately be invaded by other grasses. Several years after establishment, all Pacific Northwest lawns have significant populations of plant species that were not planted originally and that alter the texture and color of the lawn.

Lawns are also invaded by a variety of broad-leaved plants. Diseases such as take-all patch, fusarium, and red thread (all fungi) attack our lawns. Nasty insects such as craneflies, sod webworms, chinch bugs, and cutworms consume parts of our turf. What are we to do? The Northwest herb lawn is one solution.

The Grass Matrix

The major ingredient in the Northwest herb lawn mix is one or more turf grasses. Under conditions of low fertility, perennial rye and Kentucky blue grass are not highly competitive. This is good for the herbs sown along with the grasses as they will have an easier time becoming established and persisting. Also, perennial rye germinates and establishes quickly, getting the new lawn up and growing in a timely fashion. Red fescue is more competitive than perennial rye but has a nicer texture and is shade tolerant. Chewings fescue, hard fescue, and bentgrass are too competitive to be used successfully in an herb lawn mixture, according to OSU's Cook.

Northwest herb lawns are easiest to establish when working with fresh ground, and spring through early summer is the best time to sow the seed. However, you may wish to sow the herb seed over an existing lawn. De-thatch the lawn thoroughly in order to open up small areas of bare ground before sowing the herb seeds. This allows it to germinate and the small plants to establish more easily. Leave the clover out altogether; it will invade on its own later. Overseeding an established lawn will not provide the same look as one started fresh because it will have a smaller population of herbs.

I have been using a mixture of red fescue and 'Elka' perennial rye (together called Companion grass mix, available from Protime Lawn Seed in Portland) in the herb lawns I have sown.

Herbs for the Lawn

Herbs that have been tested in the Northwest herb lawn are Dutch white clover (*Trifolium repens*), strawberry clover (*Trifolium fragiferum*), English daisies (*Bellis perennis*), Roman chamomile (*Anthemis nobilis*), baby blue eyes (an annual, *Nemophila menziesii*), and yarrow (*Achillea millefolium*). Each commercial mix contains a slightly different group.

Baby blue eyes is included in the Dryland Ecology Lawn mix sold by Nichols Garden Nursery. It produces a lovely light blue flower the first spring after sowing. However, this annual does not persist over time. The Nichols mix also has daisies, yarrow, chamomile, Dutch white and strawberry clover, and companion grass. Nichols' Northern Ecology Lawn mix contains bentgrass instead of perennial rye and fescue and may be dominated by the bentgrass at the expense of the herbs. The Lawn Center in Milwaukie, Oregon, and Protime Lawn Seed in Portland sell a mix called Fleur de Lawn, which has 'Elka' rye, baby

blue eyes, sweet alyssum, daisies, yarrow, and strawberry clover.

Clover inevitably invades our lawns. Why not welcome it? Clover has two positive features: It fixes nitrogen from the atmosphere into the soil, lessening the need to fertilize, and it is drought tolerant, providing green color after the grass is dormant.

Clover also has two notable negative attributes. It blooms prolifically making it very attractive to bees, which are hazardous to some people. Also, it can outcompete the other broad-leaves in the mix, especially if you plant the lawn in fall. Germination and growth is slow for the other broad-leaves at that time. I have had success leaving the clover out of the mix and letting it invade on its own later. Planting just the strawberry clover is another option since it is less vigorous than the Dutch white. Cook is still looking for the perfect legume (a group of nitrogen-fixing plants)—one that will grow uniformly, be less vigorous than clover, and not attract bees.

English daisy is a short white- or pink-flowered herb that the English unjustifiably loathe as a pernicious weed. Sowing daisies in a lawn produces a fairy-tale like quality, a flowery mead. It is slow to get started but increases over the years and blooms for a long period in spring and early summer. Unlike clover, its flowers are not particularly attractive to bees. English daisies are easily available and fairly inexpensive. They have a big impact in an herb lawn and are a must for any mix except next to a perennial border where they may compete with early blooms.

Roman chamomile seed is difficult to come by in quantity because there are currently no growers in the United States. Also, it is unclear whether it will persist in the lawn over time. However, chamomile has survived for two years in the lawns I have sown. It imparts a feathery texture and a smell so pleasant upon mowing that it is a constituent I always try to include in the mix.

Sweet alyssum (*Lobularia maritima*), a self-sowing tender perennial, is a sweetly scented, low-growing herb. I cannot say whether it will persist in your lawn, but it will attract bees.

Yarrow has feathery foliage, a rhizomatous habit, is somewhat wear resistant, and is very drought tolerant. If the grass goes dormant and turns brown, the yarrow remains green. Although mowing prevents flowers from forming on this plant, yarrow is a workhorse ingredient in the herb lawn; do not leave it out.

Caring for the Northwest Herb Lawn

Growth of the herb lawn in spring is so rapid that fairly frequent mowing is required. Cook mows his test plots every one to three weeks to a height of two inches. The herbs will bloom most intensely if the lawn is allowed to grow to a height of four inches between mowings. Most of my clients mow weekly (or more in spring), which is not harmful to the lawn, but it does reduce the amount of flowering. Use a rotary mower, not a reel mower.

Cook does not apply fertilizer to his plots in Corvallis, which grow on the fertile Willamette River flood plain. The clover adds enough nitrogen to the soil for adequate growth. However, where I live on Bainbridge Island, Washington, there is sandy, infertile soil containing little organic matter, and it is necessary to fertilize once or twice the first season. Using one of the organic lawn fertilizers now available works fine for me. I am hoping fertilizer will not be necessary in the future as these lawns mature and clippings are returned to the soil through mowing (bagging is discouraged).

Irrigation varies according to individual conditions. Tom Cook estimates irrigation needed is one-third to one-quarter the amount recommended for a traditional lawn because between irrigations the grass component of the lawns goes dormant. It is important to have enough herbs in the mix to temper the visual effect of the brown grass. The yarrow, clover, daisies, and chamomile will stay green even if the grass turns brown.

During our summer drought Cook applies about one-and-one-half inches of water to his test plots once a month. On Bainbridge Island, where the soil does not hold onto water nearly as long as Corvallis's clay, we may need to irrigate somewhat more frequently. Also, my clients are not yet emotionally prepared to allow their grass to go dormant. Perhaps as the lawns mature, the ratio of herbs to grass increases, and water restrictions become more prevalent, they will accept the idea of applying less water.

Pests

Inevitably, our lawns will be invaded by other grasses and broad-leaves. Should the herbicide arsenal come out of the garage to control them? I am not convinced that herbicides have a justifiable place in regular lawn maintenance, but beyond the ideological debate are some practical facts regarding the herb lawn and herbicides. Although it

is possible to use some herbicides without damaging the herbs in this mix, the potential for harm is high. If you *must* rid your lawn of, say, false dandelion, then spot treat with the appropriate herbicide and always follow directions exactly.

Keep in mind that the herb lawn is better able to compete with broad-leaved weeds than the traditional all-grass lawn because it has partially filled the broad-leaf niche. It mutes the effect weeds have on the overall appearance of the lawn. A patch of lighter colored velvet grass does not stand out in a mixed lawn with varied colors and textures, as it would in a darker traditional lawn. Insect pests and diseases do not appear to be an important factor, and Cook's plots have not required treatment for them.

Experimenting with the Northwest Herb Lawn

If you want to experiment, you can mix your own seed, but don't expect to save money that way. Try 80%–90% grass seed (by weight) to 10%–20% herbs. Add more daisies and yarrow than other herbs and leave the clover out altogether or just add a small amount (2%–3%) of strawberry clover. You might also try other herbs such as Johnny-jump-ups (*Viola cornuta*).

Whether you buy a mix or develop your own recipe, look forward to a lawn of slightly different texture than those developed for other areas, one that competes better against weeds and uses less fertilizer and water.

Sherry Wellborn is a landscape designer living on Bainbridge Island, Washington, and working in the Puget Sound region.

Sources

Applewood Seed Company, 5380 Vivian Street, Arvada, CO 80002; (303) 431-6283. Herb seed. Free catalog.

The Lawn Center, 11925 S.E. 22nd Avenue, Milwaukie, OR; (503) 654-6725. It sells Companion Grass mix and Fleur de Lawn retail for those in the Portland area.

Nichols Garden Nursery, 1190 North Pacific Highway, Albany, OR 97321; (503) 928-9280. This mail-order supplier sells Dryland Ecology Lawn and Herb mix and Northern Ecology Lawn mix. Free catalog.

Protime Lawn Seed, Hobbs & Hopkins Ltd., 1712 S.E. Ankeny Street, Portland, OR 97214; 1-800-345-3295 or (503) 239-7518; FAX: (503) 230-0391. Both wholesale and retail mail order is available for Companion Grass mix and Fleur de Lawn. Free catalog.

EST. 1888
SWANSONS
Nursery•Greenhouses•Complete Landscaping Service
9701 15th N.W.
Seattle, WA 98117
(206) 782-2544
Open 7 days a week
for all your shopping needs.

Join an
Ever-changing Tour
of the Arboretum
Sundays at One
at the
Graham Visitors Center
2300 Arboretum Dr. E.
(206) 543-8801

In the Washington Park Arboretum

by John A. Wott

Welcome to The Arboretum Foundation's Executive Director

Everyone is excited about the arrival of Debra Holland, the first-ever executive director for The Arboretum Foundation. Debra's new position in the non-profit Foundation is to raise private support for the Arboretum. A Seattle native, with experience in non-profit organizations, Debra will also be involved with volunteers, education, and program planning. She most recently was executive director of the City Club of Seattle.

The New Zealand Garden

Plans are being finalized for the fall planting of a prototype New Zealand Garden, to be along Arboretum Drive East near the present groupings of Southern Hemisphere plants. While the emphasis will be on plants from the Arthur Pass area of New Zealand, we will supplement with other New Zealand plants already in our collections. This project is a result of the support from the Seattle Sister City Christchurch Committee.

Plants to be used in the garden include *Aciphylla glaucescens*, *Cassinia fulvida*, *Chionochloa conspicua*, *Griselinia littoralis*, *Hebe* species, *Hoheria glabrata*, *Hymenanthera alpina*, *Metrosideros umbellata*, *Olearia nummulariifolia*, *Podocarpus nivalis*, and *Nothofagus solandri* var. *cliffortioides*.

The Wisteria Display is Changing

Our staff has selected seven cultivars of wisteria for display on the arbors around the Graham Visitors Center, 2300 Arboretum Drive East, Seattle. The unnamed wisteria presently on the arbor will be removed and the new named ones planted on the east arbor. A selection of flower colors and forms will be included. Funds for the project were donated by the family of Mrs. Yayoi Inouye.

North American Plant Collections Consortium

Center for Urban Horticulture (CUH) graduate student Joanna Beitel has been examining several of our collections for possible inclusion in the North American Plant Collections Consortium (NAPCC). The NAPCC is a program developed by the American Association of Botanical Gardens and Arboreta (AABGA), which designates certain gardens as national collections of particular groups of plants.

For the professional paper requirement for a master's of Forest Resources degree, Joanna has been evaluating the Washington Park Arboretum's collections of maples, Japanese maples, hollies, oaks, and firs. She is also comparing the collection with those at other institutions. Preliminary results indicate that our collections of these groups are among the very best in the United States. Joanna is working closely with Registrar Tracy Omar, Director Emeritus Brian Mulligan, and former Arboretum staff member, Jan Pirzio-Biroli.

Winter Garden Maintenance Plan

CUH graduate student Gael Varsi is doing her professional paper on a landscape maintenance management plan for the Arboretum's Joseph A. Witt Winter Garden. Her project includes updating the garden inventory, identifying current site problems, summarizing the previous year's maintenance schedules and practices, and projecting annual tasks, schedules, and amount of labor needed. Gael is working closely with Arboretum Horticulturist Chris Pfeiffer on this project. The results of her work will be integrated with the overall needs for maintenance records and planning.

Lath House

The curatorial committee is now completing an inventory of the plants in the lath house south of

the Graham Visitors Center. The committee consists of John Wott, director; Tracy Omar, registrar; Chris Pfeiffer, horticulturist; Barbara Selemon, plant propagator; and Fred Hoyt, grounds supervisor, Center for Urban Horticulture. Early this fall, they will decide which plants to move into the permanent collections, remove, and/or re-propagate. The intention is to make the area more useful as well as aesthetically pleasing.

Institute of Museum Services Grant

The Washington Park Arboretum was one of ten arboreta in the United States to receive an award of $112,500 for general operations from the Institute of Museum Services. The stipend, to be paid over a period of two years, is the largest such grant received by the Arboretum. The funds can be used only to supplement current operational budgets for maintenance, plant record keeping systems, educational and interpretation systems, and special arboricultural maintenance.

John A. Wott, Ph.D., is the University of Washington's new director of Arboreta, Washington Park Arboretum, Seattle. As the University's counterpart to The Arboretum Foundation's executive director, he manages the Arboretum and its operations.

MADISON PARK
HARDWARE

1837 42nd E. 322-5331
GARDEN SUPPLIES · PAINTS · TOYS · GIFTS

CAFE FLORA

2901 EAST MADISON, SEATTLE, WASHINGTON 98112 (206) 325-9100

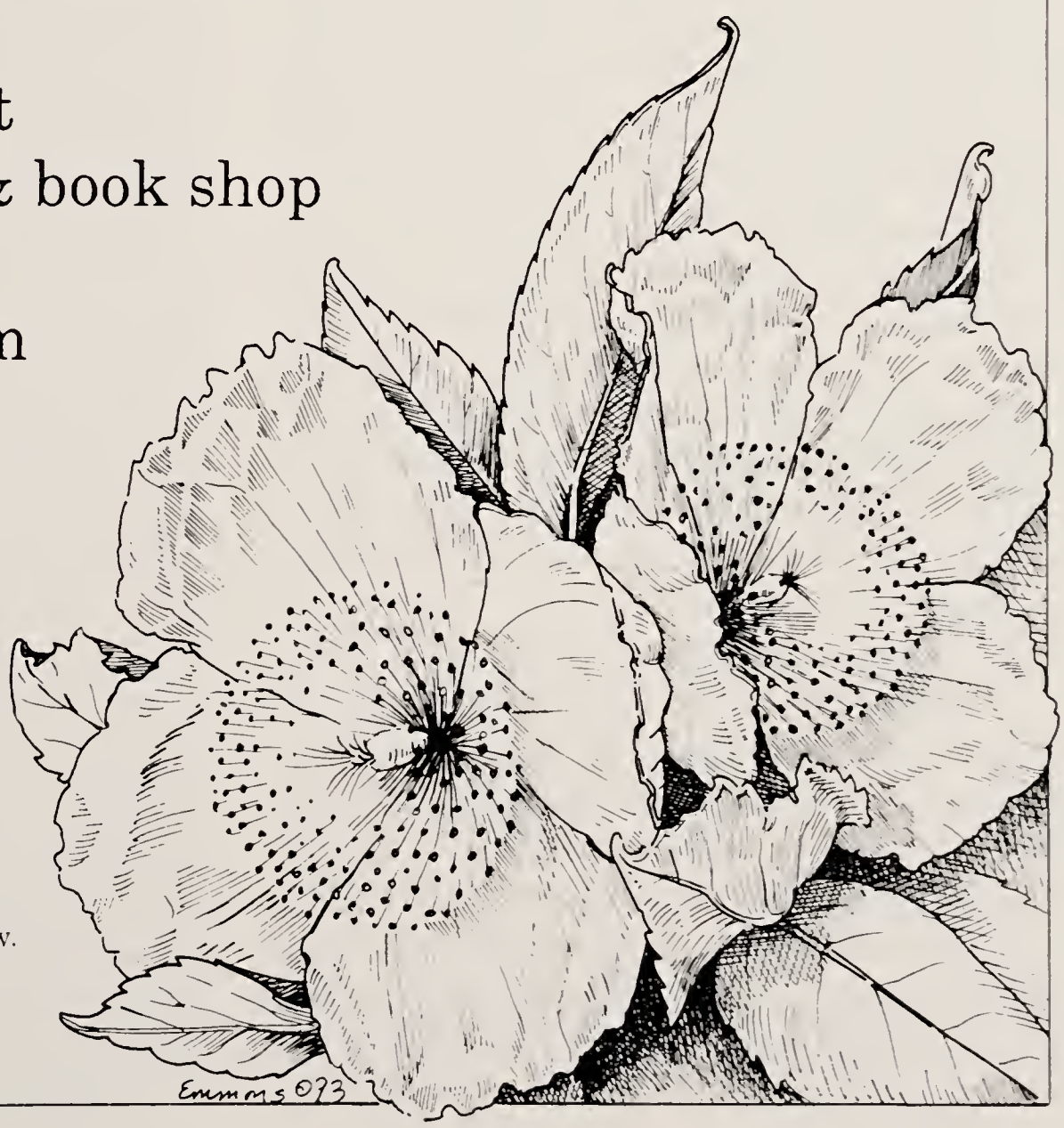
THE ARBORETUM FOUNDATION

invites you to visit
our unusual gift & book shop
in the
Donald G. Graham
Visitors Center.
2300 Arboretum Drive

weekdays 10am to 4pm
weekends noon to 4pm

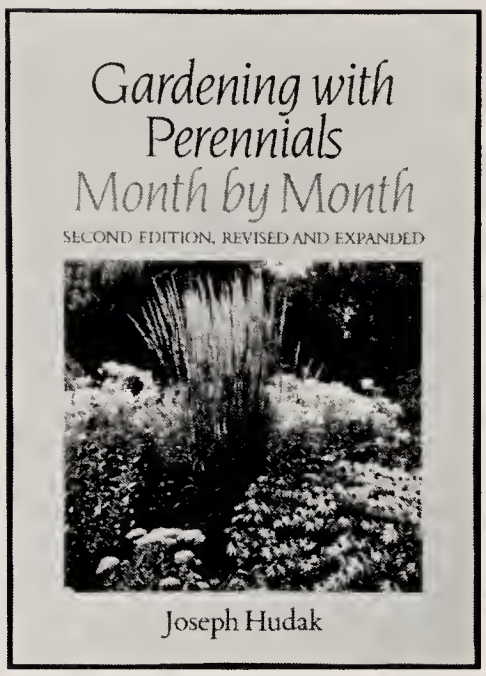
Visit Our Booths #401 & 403
at the Northwest Flower & Garden Show.

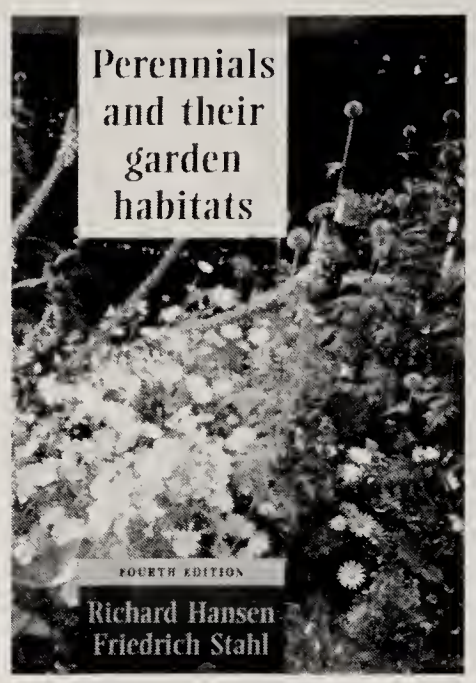
Eucryphia × *nymansensis* 'Nymansay'



Book Reviews

Gardening with Perennials Month by Month. Revised and expanded by Joseph Hudak. Portland, OR: Timber Press, 1993. ISBN 0-88192-264-1. $59.95.





Perennials and Their Garden Habitats. Richard Hansen and Friedrich Stahl. Translated from the German. Portland, OR: Timber Press, 1993. ISBN 0-88192-222-6. $49.95.

Any comparison between these books could be said to be made unfairly. Hudak's book is concerned solely with listing and describing the perennials, bulbs, and grasses that are in bloom March through September. He does include notes on propagation and general maintenance and some ''useful lists'' and fern descriptions at the end. The Hansen and Stahl book covers a much wider field.

Hudak's book is large with lots of empty white spaces, large print, and wide margins. The 400 color photos are of reasonable quality, but they are small. It is nice to have them in blocks before each relevant month. There is some choice of cultivars listed for most species and some new names for Northwest coast gardeners to watch for (e.g., Oregon/Pacific strains of aster). In other cases, however, information is meager—only the species *cambrica* for *Meconopsis?* I looked in vain for monthly notes on foliage effect, leaf color, plant form, and texture, and wondered if anything happens in Mr. Hudak's garden from September to March.

Hansen and Stahl's book, first printed in 1981, is a small size but has 400 pages (compared with Hudak's 300). Included are only 91 color plates, but these are large and of good quality, with many groups and combinations. How nice to have all the plants in the groups named.

Culture, maintenance, and propagation are explained in considerable detail, particularly regarding the importance of knowing the natural habitats. The information on woodlands is particularly relevant for western Washington gardeners. Design is dealt with in detail here (and not even mentioned in Hudak's work).

The system of categorization takes some getting used to in Hansen and Stahl. The lists are very detailed and narrowed down to specific subdivisions. The list numbers refer the reader to chapters and paragraphs within the chapters. This could be demanding and possibly infuriating for the tired gardener who has half an hour of daylight left and needs vital information on a new plant. However, every possible combination of conditions or types of plant is covered, so the lists seem worth pursuing.

The authors of *Habitats* are very inclusive in their interpretation of perennials. Alpine and water plants, grasses, ferns, and herbs are addressed. It is much more comprehensive than is Hudak and considering the amount of work put into it, I wonder why the price is less. Whatever the reason, I know that this is the one I shall be saving up to buy.—*Reviewed by Susan Buckles*

Susan Buckles has been a gardener on the grounds of Children's Orthopedic Hospital, Seattle, for 18 years, following completion of her associate's degree in Ornamental Horticulture at Edmonds Community College. Sue, a specialist in perennials, once worked in the herbaceous border at Powis Castle Gardens, Great Britain. She also works for Flora and Fauna, a natural history specialty book store in Pioneer Square, and reads gardening books for relief.

New on the Shelves
of the Elisabeth C. Miller Library

Courtesy, University Photography, University of Washington

by Valerie Easton

Bloom, Alan, and Adrian Bloom. *Blooms of Bressingham Garden Plants*: Choosing the Best Hardy Plants for Your Garden. London: HarperCollins, 1992. ISBN 0-00-412329-8. Encyclopedic in scope, with listings of more than 5,000 species, this directory is written by a vastly knowledgeable father-and-son team. Many color photographs of individual plants and combinations and cultural information make this a practical, readable guide to garden-worthy plants.

Hart, Rhonda Massingham. *North Coast Roses*: for the Maritime Northwest Gardener. Cascadia Gardening Series. Seattle: Sasquatch Books, 1993. ISBN 0-912365-76-5. The second book in the new Cascadia Series focuses on the special growing conditions west of the Cascades from British Columbia to northern California. Hart, who gardens in Washington State, discusses a wide variety of roses, from hybrid teas to the natives and heirlooms, as well as the newer David Austin ''English'' roses. Useful appendices include tips on month-by-month rose care and lists of local sources, societies, and public gardens featuring roses. Information on companion plants for roses, not covered in most rose books but featured here (although not included in the index) is very useful. It is most welcome to have the regional slant offered in this new series and, for the most part, it is used successfully in this title. I question, however, why *Rosa banksiae* is included when it needs more heat and sun than we usually have for successful bloom. The regional perspective is well served, however, in a list of seaside roses and with much advice from local experts.

Lloyd, Christopher. *Christopher Lloyd's Flower Garden*. London: Dorling Kindersley, 1993. ISBN 1-56458-167-5. This exceptionally photographed, opinionated, wide-ranging, and wonderful book is the next best thing to a tour of Great Dixter. From the walled garden to the long border and the lower moat, Christopher Lloyd guides readers through the gardens developed by his family since 1912. Failed experiments and gorgeous successes in all seasons are chronicled here; Lloyd tells us what works and why, as well as what he plans for the future. Visual inspiration includes giant reed grass, *Arundo donax*, growing through what looks like acres of lacecap hydrangeas that are planted with *Geranium endressi* 'Wargrave Pink'. A photo entitled ''Invited guests and gate crashers'' illustrates, with blue poppy heads, pink poppies, foxglove, and a native meadow cranesbill, why Lloyd appreciates self-sowers.

Solomon, Steve. *Water-Wise Vegetables*: for the Maritime Northwest Gardener. Cascadia Gardening Series. Seattle: Sasquatch Books, 1993. ISBN 0-912365-75-7. This first book in the new Cascadia series is, as are the ones that follow, small and inexpensive, with a few quality color photos, well-designed color covers, and many charts, lists, and line drawings. Gardening with less water is certainly a current topic for our region, and Steve Solomon learned by necessity from a large garden with an insufficient well how to raise a variety of healthy vegetables using little supplemental water. The techniques he has developed and proven successful are explained, followed by an alphabetical listing of recommended varieties of vegetables.

Discover Us In Wallingford

Garden Gifts For Garden Friends

The Garden Spot

45th & Wallingford (206) 547-5137

Visit Our Booths #901 & 903
at the Northwest Flower & Garden Show.

PHILLIPS FOSS WOOD
GARDEN DESIGN & CONSTRUCTION
632-6735

Visit Our Garden at the
Northwest Flower & Garden Show.

More Reading

Boisset, Caroline, and Fayal Greene. *The Garden Sourcebook*: A Practical Guide to Planning and Planting. New York: Crown Publishers, Inc., 1993. ISBN 0-517-590712-9.

Bormann, F. Herbert, Diana Balmori, and Gordon T. Geballe. *Redesigning the American Lawn*: A Search for Environmental Harmony. New Haven: Yale University Press, 1993. ISBN 0-300-05401-7.

Ferreniea, Viki. *Wildflowers in Your Garden*. New York: Random House, 1993. ISBN 0-679-41453-3.

Halpin, Anne Moyer, and Betty Mackey. *Cutting Gardens*. New York: Simon & Schuster, 1993. ISBN 0-671-74441-0.

Harding, Alice. *The Peony:* Alice Harding's Peonies in the Little Garden and *The Book of the Peony* (printed together). Portland, OR: Sagapress/ Timber Press, 1993. ISBN 0-88192-274-9.

Harkness, Mabel G. *The Bernard E. Harkness Seedlist Handbook*. 2nd ed. Portland, OR: Timber Press, 1993. ISBN 0-88192-226-9.

Hayward, Gordon. *Garden Paths:* Inspiring Designs and Practical Projects. 1st ed. Charlotte, VT: Camden House, 1993. ISBN 0-944475-40-X.

Holmes, Roger. *Taylor's Guide to Natural Gardening*. Taylor's Guides to Gardening. Boston: Houghton Mifflin, 1993. ISBN 0-395-60729-9.

Kelly, John. *Plants with Impact*. North Pomfret, VT: Trafalgar Square Publishing, 1993. ISBN 0-943955-62-9.

Loewer, H. Peter. *The Evening Garden*. New York: Macmillan Publishing Company, 1993. ISBN 0-02-574041-5.

O'Brian, Patrick. *Joseph Banks, A Life*. 1st US ed. Boston: Godine, 1993. ISBN 0-87923-930-1.

Osler, Mirabel. *The Secret Gardens of France*. New York: Prentice Hall, 1993. ISBN 00-671-79889-8.

Otto, Stella. *The Backyard Orchardist*: A Complete Guide to Growing Fruit Trees in the Home Garden. Maple City, MI: OttoGraphics, 1993. ISBN 0-9634520-2-9.

Reynolds, Phillis C., and Elizabeth P. Dimon. *Trees of Greater Portland*. Portland, OR: Timber Press, 1993. ISBN 0-88192-263-3.

Riotte, Louise. *Successful Small Food Gardens*. Pownal, VT: Storey Communications, 1993. ISBN 0-88266-816-1.

Stevens, David. *Simple Garden Projects:* A Collection of Original Designs to Build in Your Garden. Chester, CT: Globe Pequot, 1992. ISBN 1-56440-34-4.

Thoreau, Henry David. *Faith in a Seed*: The Dispersion of Seeds and Other Late Natural History Writings. Washington, DC: Island Press/ Shearwater Books, 1993. ISBN 1-55963-181-1.

All of these books and journals can be found in the Elisabeth C. Miller Library, Center for Urban Horticulture, University of Washington. Library hours are 9 a.m. to 8 p.m., Monday; 9 a.m. to 5 p.m., Tuesday through Friday. Phone: (206) 543-8616.

Valerie Easton, librarian at the Elisabeth C. Miller Library in the University of Washington's Center for Urban Horticulture, is the book review editor of *The Washington Park Arboretum Bulletin*.

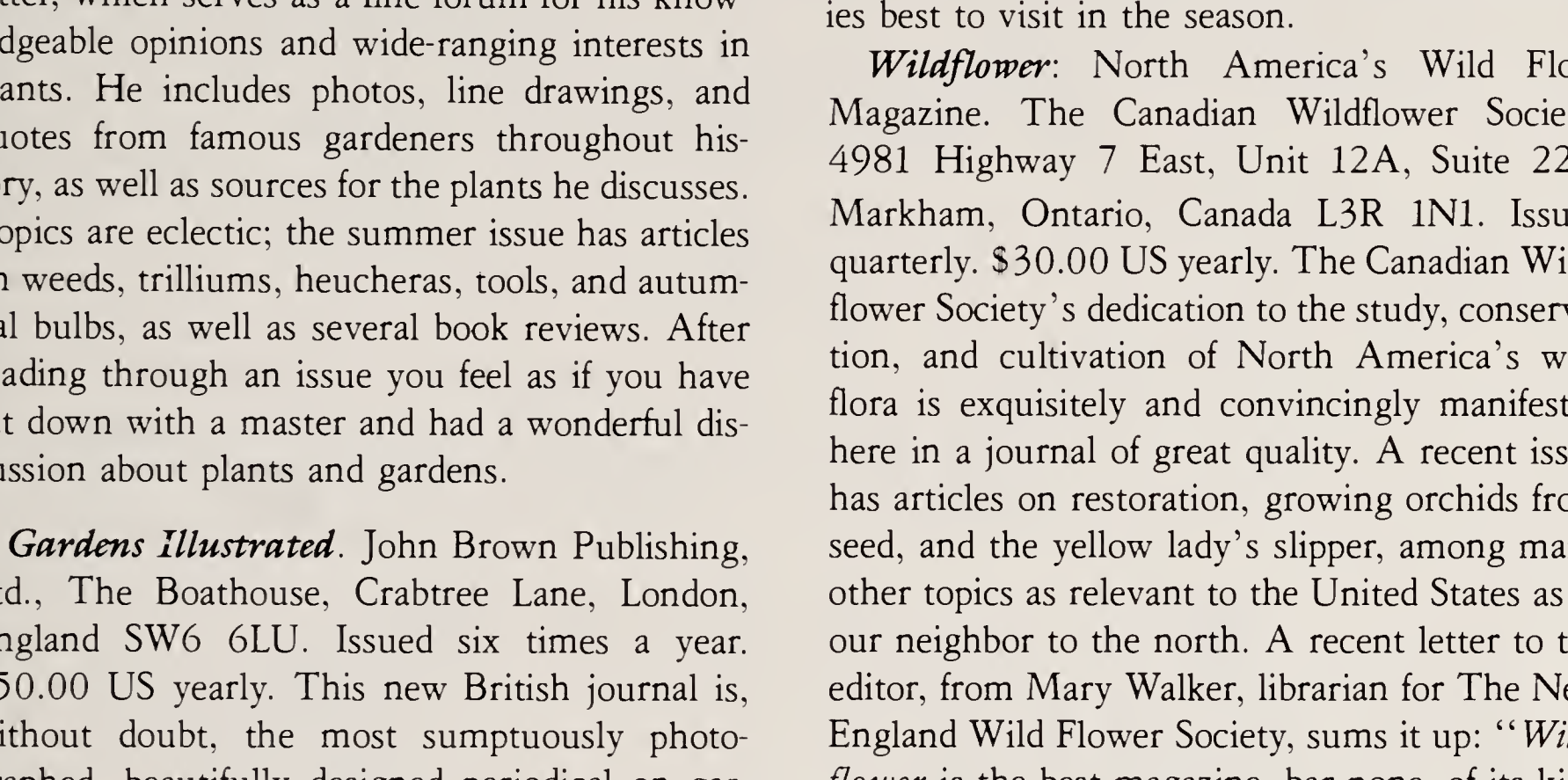
For Further Information: Interesting New Journals by Valerie Easton

Several exciting new journals have arrived on library shelves.

Allen Lacy's Homeground: A Quarterly Newsletter. Box 271, Linwood, NJ 08221. $38.00 yearly. Allen Lacy—gardening writer for the *New York Times*, book author, and philosophy teacher—is the primary author of this newsletter, which serves as a fine forum for his knowledgeable opinions and wide-ranging interests in plants. He includes photos, line drawings, and quotes from famous gardeners throughout history, as well as sources for the plants he discusses. Topics are eclectic; the summer issue has articles on weeds, trilliums, heucheras, tools, and autumnal bulbs, as well as several book reviews. After reading through an issue you feel as if you have sat down with a master and had a wonderful discussion about plants and gardens.

Gardens Illustrated. John Brown Publishing, Ltd., The Boathouse, Crabtree Lane, London, England SW6 6LU. Issued six times a year. $50.00 US yearly. This new British journal is, without doubt, the most sumptuously photographed, beautifully designed periodical on gardening available. How I wish we had a magazine of the same quality on American gardens! Penelope Hobhouse (an associate editor), Patrick Taylor, Christopher Lloyd, and other well-known gardening writers are regular contributors on topics of design, individual species, garden history, and art in the garden. An excellent feature is "Timely Visits," which offers descriptions and photos of gardens, arboreta, and nurseries best to visit in the season.

Wildflower: North America's Wild Flora Magazine. The Canadian Wildflower Society, 4981 Highway 7 East, Unit 12A, Suite 228, Markham, Ontario, Canada L3R 1N1. Issued quarterly. $30.00 US yearly. The Canadian Wildflower Society's dedication to the study, conservation, and cultivation of North America's wild flora is exquisitely and convincingly manifested here in a journal of great quality. A recent issue has articles on restoration, growing orchids from seed, and the yellow lady's slipper, among many other topics as relevant to the United States as to our neighbor to the north. A recent letter to the editor, from Mary Walker, librarian for The New England Wild Flower Society, sums it up: "*Wildflower* is the best magazine, bar none, of its kind in North America—I see them all."



Perennials. Annuals.
Geraniums.
Seasonal Color.
Bulbs and Vegetables.
New Varieties and Old.
And Herbs, of Course.

9 to 5 Everyday
206-784-2222

Easy to Find. Just 30 Minutes from Seattle. Take I-90 east to Exit 22. Go through Preston toward Fall City. 3 miles from I-90, take "Y" left over the green bridge. Follow signs 1/2 mile further

The Herbfarm

NURSERY · GIFT SHOP · GARDENS · RESTAURANT · PHONE ORDERS

Visit Our Booths #812 & 814
at the Northwest Flower & Garden Show.

FURNEY'S NURSERIES

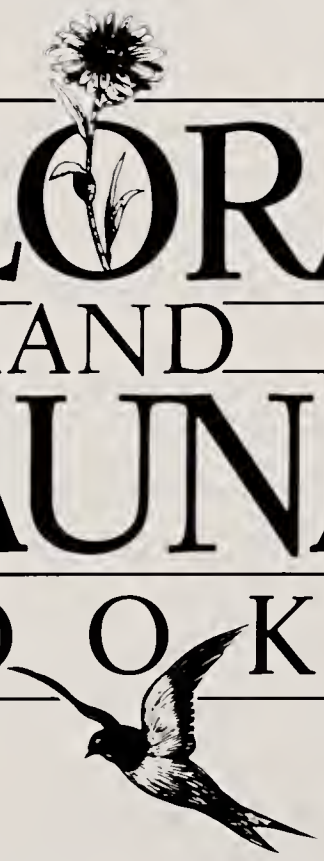
Over 50 years of quality plants and service

Since 1940

Visit Our
Garden at the
Northwest Flower & Garden Show.

Seattle ✧ Bellevue ✧ Bremerton

FLORA AND FAUNA BOOKS



The Northwest's finest garden bookshop. Specializing in horticulture and nature. New and rare books. Search service and mail order. Friendly, knowledgeable staff.

121 First Ave. So., Seattle, WA 98104
(206) 623-4727

Visit Our Booths #502 & 504
at the Northwest Flower & Garden Show.

Garden Enthusiasts

Garden Works is full of unique, practical ideas for the garden enthusiast—useful tools, seeds, wreaths, fountains, yard ornaments, organic fertilizers, address signs, bird houses and feeders, and more—at prices that are equally practical.

GARDEN WORKS

10632 N.E. 9th St. Bellevue, WA 98004
(206) 455-0568

Visit Our Booth #1220 at the
Northwest Flower & Garden Show.

Northwest Flower and Garden Show

FEBRUARY 9-13, 1994 ✦ CONVENTION CENTER ✦ SEATTLE

Treat Yourself to Spring!

Visit the premier spring flower and garden show in western North America.

✦ 30 fully landscaped gardens and major exhibits

✦ 300 commercial booth displays

✦ 60 educational exhibits

✦ Amateur Competitions for Horticulture and Floral Design

✦ 100 + lectures and seminars

✦ Miniature Gardens

✦ Advance tickets available at U.S. Bank branches in western Washington

✦ For information about group tickets,
contact Celice Eldred at Show Headquarters

Show Headquarters ✦ 1515 NW 51st Street ✦ Seattle, WA 98107
Fax (206) 784-5545 ✦ Phone (206) 789-5333

Preview party evening of February 8, sponsored by The Arboretum Foundation.
For Preview Party ticket information, call the Arboretum Foundation (206) 325-4510.

Joy Spurr

Callicarpa bodinieri holds lilac or purple fruit from fall through early winter. Find specimens in the southeast end of the Joseph A. Witt Winter Garden and in the Woodland Garden (near the *Cornus kousa*) of the Washington Park Arboretum.

WASHINGTON PARK
ARBORETUM

The Bulletin is published by
The Arboretum Foundation
Washington Park Arboretum
University of Washington XD-10
Seattle, Washington 98195

An *arboretum* is a living museum of woody plants for education, conservation, research, and display.

Nonprofit Org.
U.S. Postage
PAID
Seattle, Washington
Permit No. 126